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# Improving a Fall Prevention and Management Program in an Acute Care Setting

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Improving a Fall Prevention and Management Program in an Acute Care Setting

Submitted in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice  
at Eastern Kentucky University

By

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Huntington, WV

2015

### Abstract

In-patient falls are common but preventable adverse events. A patient fall has become a targeted event that hospitals across the country are trying to prevent by implementing new evidence-based strategies and techniques. The purpose of this capstone project was to implement a valid and reliable fall risk assessment tool and a post-fall huddle process. Following a 30-day pilot of the new fall prevention protocol on a medical-surgical unit at the Cabell Huntington Hospital, the documentation of fall risk and post-fall huddles was examined. Fall rates during the pilot were compared to pre-implementation rates. During this project, the new fall risk assessment tool, the Morse Fall Scale (MFS), was completed for all patients. The required completion of the MFS form, integrated into the computer charting system, facilitates adherence to the fall prevention protocol. However, the completion of the online training module and competency test was low at 20.5%. Lack of training may compromise the effective use of the tool. The staff's accurate use of the MFS needs to be monitored closely and feedback provided to ensure effectiveness of this tool. The total number of patient falls during the 30-day pilot was five. This was a 29% improvement over the last reported month (n=7). Post-fall-huddles were conducted and documented for all five fall events. Ongoing monitoring of subsequent interventions implemented by the staff to prevent falls and frequent dissemination of unit-specific fall data is needed to ensure fidelity to the protocol. More information is needed on the context of falls to evaluate patient safety practice.

*Keywords:* patient falls, fall assessment tool, interventions, falls scale, post-fall huddles

## Improving a Fall Prevention and Management Program in an Acute Care Setting

By

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## Improving a Fall Prevention Program in an Acute Care Setting

### **Background and Significance of Proposed Project**

#### **Problem Identification**

Falls have been reported to be the second leading cause of unintentional injury across the globe (Ireland, Kirkpatrick, Boblin, and Robertson, 2013). Falls occur with or without injury and are the second most commonly occurring adverse event inside healthcare institutions (Wilbert, 2013). The National Quality Forum (NQF) identified a patient fall as a “never event” in the United States but even with that classification, falls still occur (AHRQ, 2014). In 2001, the phrase “never event” was introduced and referenced medical errors that should never occur while a patient is under the care of licensed, trained medical staff (AHRQ, 2014).

According to the Washington State Hospital Association (WSHA) (2014), between 700,000 and 1,000,000 people are affected by inpatient falls in the United States each year. In 2008, the Centers for Medicare and Medicaid Services (CMS) ceased reimbursement to hospitals for fall-related treatment. In order to provide improved safety to inpatients and increase the quality of care patients receive coupled with lack of reimbursement hospitals are receiving, facilities have been searching for improvements to increase the success of fall reduction protocols. Literature shows that the most effective type of interventions used in reducing falls are multi-faceted fall prevention protocols (Choi, Lawler, Boenecke, Ponatoski, & Zimring, 2011). The United States Department of Veterans Affairs (2014) suggested that identifying why a patient fell and assessing the individual is a very important step in a multi-faceted protocol. Prior to this project, Cabell Huntington Hospital, the facility in which this capstone project was implemented, did not include a post-fall assessment in its fall prevention protocol.

**Context of the Problem**

The Center for Disease Control (CDC) lists falls as the most frequent cause of fatal or non-fatal injuries in older adults (2015). In 2010, the Joint Commission shared its standards and expectations for patient falls by requiring hospitals to assess and manage each patient's risk for falls as well as implement interventions to reduce falls based on the fall risk assessment score (Jorgensen, 2011). Best practice guidelines suggest that health care workers identify patients at risk for falling as well as implement targeted interventions to prevent or reduce the occurrence of falls (Wilbert, 2013).

The National Database of Nursing Quality Indicators (NDNQI) (2015) defines a fall as an unplanned descent to the floor with or without injury. The Joint Commission's (2015) national patient safety goals focus on reducing the risk of patient harm resulting from falls. This goal focuses on assessment and reassessment of patients and the risk for falls. The 2006 national patient safety goal states "Reduce the risk of patient harm resulting from falls. Implement a fall reduction program and evaluate the effectiveness of the program" (The Joint Commission, 2015, p. 75).

**Scope of the Problem**

When The Joint Commission required facilities to adopt a fall reduction program, facilities began to implement risk assessment tools and risk assessment interventions. Some facilities failed to include post-fall assessments that would incorporate a more individualized root cause analysis (RCA) of why the event occurred if the patient had been properly identified by a falls risk assessment tool (FRAT) with appropriate interventions in place.

Cabell Huntington Hospital (CHH) uses the NDNQI data tracking tool to input inpatient fall data. Each unit in the hospital tracks the number of falls for the month and the data is



collected and shared with staff. The NDNQI data track the number of falls per 1,000 patient days. According to the NDNQI data, 2 North Bed Towers (2NBT), a medical-surgical unit, reported 28 patient falls for the third quarter of 2014. During the fourth quarter, the unit experienced 18 patient falls. In the first quarter of 2015, 2NBT reported 27 patient falls. This same unit reported eight patient falls in June 2015, eight patient falls July 2015, and seven patient falls August 2015 (Table 1).

Table 1

*2015 2NBT Patient Falls*

Month	Jan.	Feb.	March	April	May	June	July	August
# of patient falls	9	11	7	5	8	8	8	7

### **Consequences of the Problem**

Consequences of falls include serious injuries, loss of independence, anxiety, fear, functional impairment, and even death (Perrell, Nelson, Goldman, Luther, Prieto-Lewis, & Rubenstein, 2001). Additionally, an inpatient fall leads to increase length of hospital stay. The increase in length of stay requires additional treatment therefore increasing cost and loss of reimbursement for the hospital.

In addition to pain, a patient may experience feelings such as anxiety and fear from a fall-related event (Ireland, et al., 2013). The patient's family is also affected by this preventable event. Family members often question the safety of nursing care the patient is receiving and may feel a sense of distrust in the facility and/or nursing staff. Staff find it difficult not to experience guilt and a sense of helplessness when a patient falls. Staff also struggles with providing a safe environment for the patient versus providing patient with autonomy and some form of independence (Oliver, 2004).

**Evidence-Based Intervention**

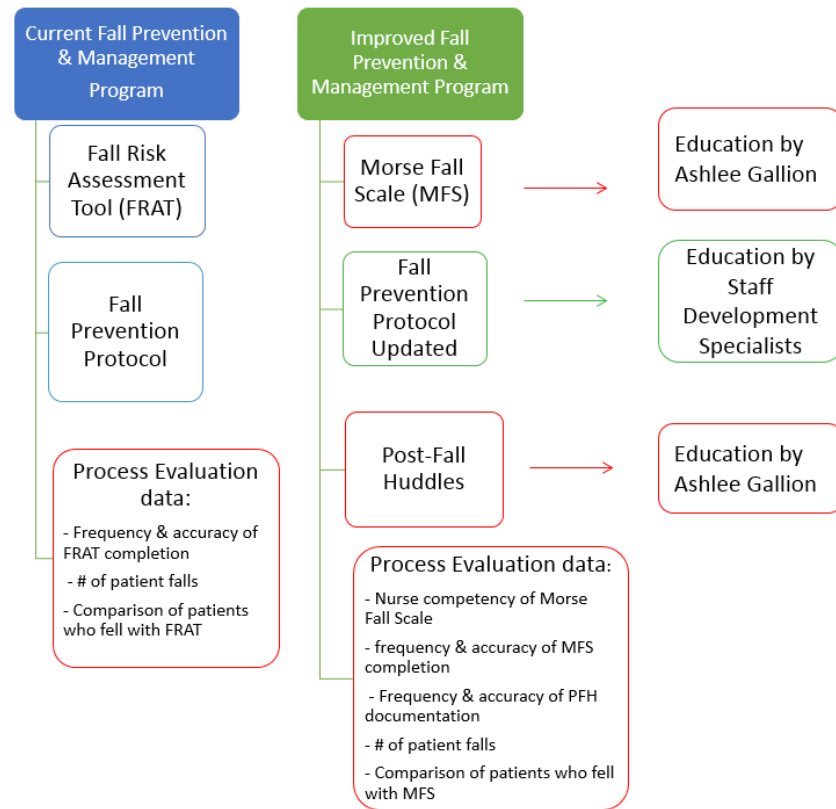
Literature supports the use of a multi-faceted fall prevention program as the most successful intervention for reducing and preventing in-patient falls (Choi, Lawler, Boenecke, Ponatoski, & Zimring, 2011; Von Renteln-Kruse & Krause, 2007). A multi-faceted fall prevention plan begins with a reliable and valid FRAT. Although multiple FRATs have been reported in the literature, the Morse Fall Scale (MFS) is one of the most reliable in predicting a patient's risk for falls (Haines, Hill, Walsh, Osborne, 2007; Healey & Haines, 2013; Perell et al., 2001; Harrington et al., 2010).

Patients who fall, especially elderly patients, tend to have a greater risk for experiencing a second or even third fall during the hospital stay. Despite interventions implemented to reduce patient's risk for falling, it is crucial to discover the cause of the fall. Discovering the cause of the fall could ultimately prevent future or additional falls – this was the anticipation for implementing post-fall huddles (PFH) as an evidence-based practice (EBP) intervention (USDofVA, 2014).

**Purpose of the Project**

The purpose of this project was to implement targeted evidence-based fall reduction interventions to the existing *Administrative Policy Patients at Risk for Falls: Assessment and Intervention* (Appendix A). The objectives of the project included (a) implementation of the Morse Fall Scale as the new fall risk assessment tool and (b) implementation of post-fall huddles to evaluate fall events. The outcomes of these interventions included a decrease in number of patients who fell and an increase in the number who were correctly identified as at risk for falling. Figure 1 shows a diagram of the project components in the context of the CHH's existing fall program. Components implemented by the DNP student are outlined in red.

Figure 1

*Project Model***Theoretical Framework****Nursing Concepts**

The American Nurses Association (ANA) (2009) categorizes adverse events as falls, pressure ulcers, medication errors, and nosocomial infections. Most adverse events are preventable; however, adverse events occur at a rate of 7.5 per every 100-hospital admission (White, Hall, & Lalonde, 2011). Healthcare workers, nurses in particular, are responsible for “...enhancing health and promoting quality outcomes” (White et al, 2011, p. 242).

Accountability is measured by quality and care provided by healthcare workers; patient safety outcomes are an important piece of quality measures. The theoretical framework used to guide

this project was Orlando's (1961) nursing process theory. Orlando (1961) developed the nursing process theory with the major concepts of the theory being: "function of professional nursing, presenting behavior, immediate reaction, nursing process discipline, and improvement."

Orlando's (1961) theory stressed the shared relationship between the nurse and patient and explained that the basis of the nurse – patient relationship was for the nurse to assess the patient's needs and meet the need as appropriate. Based on Orlando's (1961) framework, if a patient experienced stress or feelings of helplessness their needs were not being met. In order for the nurse – patient relationship to be a beneficial relationship it is important for the patient to trust the nurse to meet his or her needs. Likewise, the nurse must be able to properly perform the nursing process in order to meet the patient's needs and promote health or healing. The stages in the nursing process include: assessment, diagnosis, planning, implementation, and evaluation. Orlando's (1961) theory was used to guide the relationship between the nursing staff and patients during implementation of the EBP interventions in order for the nurse to assess the patient's risk for falls and be available to meet the patient's needs by implementing fall prevention interventions when appropriate. By following this theory as a framework for the capstone project, the nursing process was performed systematically to ensure patient safety.

### **Process Framework**

A root-cause-analysis (RCA) is a structured method used for analyzing adverse events. RCAs are helpful in identifying problems or issues surrounding the adverse event and pinpointing the root of the problem most likely causing the error, thus avoiding focusing blame on individuals (AHRQ, 2012). The Joint Commission (TJC) requires facilities to perform RCAs to identify why adverse events occurred. An RCA focuses on the systematic methods surrounding the adverse event as opposed to individual performance (Sorbello, 2008).

Conducting an RCA allows individuals to be involved and dig deeper into identifying the errors surrounding the event – exploring why the event occurred and what should happen in order to improve the process.

As a result of an RCA, an improvement or action plan should be implemented. An action plan allows the organization to focus on reducing or preventing a similar event from occurring (Hughes, 2008). Once the RCA has been conducted and the improvement plan is in place, the organization and its leaders can begin to “monitor the effectiveness of improvement” (Hughes, 2008, p. 3-6).

At CHH the unit’s clinical coordinator or charge nurse conducts the RCA. The RCA is conducted by chart audits if the event was not witnessed. Some of the data inclusion for a falls RCA involves the source of the fall, orientation of patient, patient’s activity, and the patient’s fall risk assessment score. The RCA-FALLS document currently in use at CHH is found in Appendix B.

Expanding the RCA concepts in this project allowed the project leader to gain information about previous falls that occurred on the unit and offered information to the project leader on the falls risk assessment score the patient received. The proposed post-fall huddle process refined the existing RCA procedures by including fall specific evidence-based guidelines.

### **Review of Literature and Synthesis of Findings**

During the examination of research for fall interventions, online journals were accessed through Eastern Kentucky University’s (EKU) library using CINAHL, PubMed, and Cochran databases. Terms and phrases that were searched included: falls, patient fall interventions, falls risk, multifaceted fall interventions, and in-patient fall reduction. Several research articles were

evaluated for relevancy in supporting the use of a multifaceted fall reduction plan. Studies were ranked according to Melnyk and Fineout-Overholt's (2010) evidence-based hierarchy.

### **Fall Risk Assessment Tools**

Fall risk assessment tools are used to identify the patient who may experience a fall while in the hospital. Fall risk assessment tools are also used to predict the likelihood of a patient falling (Morse, 2009). Morse (2009) explained that assessment of a patient's fall risk should be completed at least once per day, as a patient's risk is not considered stable – changing throughout the day. The Morse Falls Scale was developed in 1997 and included six variables: history of falls, secondary diagnoses, use of ambulation aid, intravenous therapy or heparin lock, gait, and mental status (Kelly & Dowling, 2004; Morse, 2009). The MFS can be scored by direct visualization/assessment of the patient and by chart audits. The MFS is a fast and simple method in assessing a patient's likelihood for falling. According to Morse (2009) a large majority of nurses stated that the scale is quick and easy to use, ultimately taking less than three minutes to assess and rate the patient.

Morse (2009) and colleagues conducted a pilot study in November 1985 assessing the feasibility of the MFS. This pilot was held during a two-week period in order to determine what method was best for data collection. Once Morse and colleagues determined the best method for data collection, the study extended for a 252-week period and gathered data from 16 patient care units (Morse, 2009). A total of 2,689 patients were assessed, with 41.2% of the patients older than 65 years of age. The average length of stay was ten days in the acute care setting and 40 days in the rehabilitation care setting. The combined number of patients was 2,689 and 1,265 or 47.1% of those patients were scored as low risk for falls, 734 or 27.3% were identified as medium risk for falling, and 690 or 25.5% were identified as high risk for falls (Morse, 2009).

When examining patient falls and the type of fall, Morse (2009) stated that of 147 falls, 91 were physiological anticipated falls, 20 were unanticipated, and 36 were accidental. According to Morse (2009) the association between fall score category and type of fall was statistically significant ( $C^2=30.2$ ,  $d.f. = 4$ ,  $p < .01$ ). When testing the scale, Morse (2009) found the sensitivity of the scale (the rate of a correct decision) was 78% - this is congruent with a 10.3% positive predictor. The scale's specificity (rate of correct decision for patients who have not fallen) was 83% with a negative predictor of 99.2% (Morse, 2009).

The meta-analysis conducted by Harrington et al. (2010) aimed to address the most accurate FRAT to use in the hospital setting. The authors evaluated the accuracy of five different FRATs. Included in the evaluation were: MFS, Hendrich II Fall Risk Model, Schmid Fall Risk Assessment Tool, The Johns Hopkins Hospital Fall Risk Assessment Tool, and the St. Thomas's Risk Assessment Tool (STRATIFY). The authors collected data by performing searches on the different FRATs and creating an excel spreadsheet containing key elements relevant in the success of the tool. The authors were looking for the tool that would be most valid in order to implement in their own facility.

Sixteen research articles were included in the meta-analysis (Harrington et al., 2010). Of these 16 articles, four were on the MFS and 12 were on the STRATIFY. The two FRATs were compared using the Fisher exact test after an analysis of the studies' characteristics were performed. The Wilcoxon 2-sample test showed age as the only characteristic that was significantly different between the four MFS studies and the 12 STRATIFY studies ( $P = .03$ ). The outcomes measured in this meta- analysis include: sensitivity, specificity, and Youden index. The sensitivity referred to the proportion of patients who fell that were correctly identified as high risk for falls. Specificity refers to the proportion of non-fallers that were appropriately

categorized as low fall risk and the Youden index is a tool that rates whether or not the tests are different and able to appropriately identify fall risk (Harrington et al., 2010). According to Harrington et al. (2010) if the Youden index is close to one, the predication of the tool is more accurate.

Harrington et al. (2010) used fixed-effects and random-effects models to analyze the data. After the data analysis, the MFS showed higher sensitivity in random-effects and fixed-effects models. The MFS showed low specificity compared to STRATIFY with a fixed-effects model, but had a high specificity when the random-effects model was used. The MFS had a higher Youden index than the STRATIFY with the fixed-effects model but the random-effects model showed a non-significant difference in Youden index between the two tools (Harrington et al., 2010).

In a systematic literature review by Perell et al (2001), a panel of five experts using a standardized review form to assess the content and validity of different FRATs reviewed 21 articles. Six of the FRATs were functional assessment scales. Risk factors for falls are categorized as intrinsic or extrinsic. Intrinsic factors for fall risk include: advanced age, chronic illness, weakness, altered mental status, and medications. The intrinsic factors most often identified during the review of the literature were altered mental status, chronic illness, sensory deficits, fall history, and elimination. The relative risk or odds ratios for multiple risk factors for falls that were identified in these studies included: muscle weakness (4.4), history of falls (3.0), gait deficits (2.9), balance deficits (2.9), use of assistive devices (2.6), visual deficits (2.5), arthritis (2.4), impaired activities of daily living (2.3), depression (2.2), cognitive impairments (1.8), and age greater than 80 years old (1.7).



The extrinsic factors that were identified included: environmental hazards or hazardous activities (walking on unsafe surfaces, inadequate lighting, and obstacles preventing the person from getting safely from point A to point B). Additional extrinsic factors found to be problematic for patients in any inpatient facility included the use of bedrails, the height of the bed or chair, and patient transfers (moving patient from one position to another) (Perell et al., 2001). These type of environmental hazards can be made worse for a patient if the patient is experiencing cognitive impairments or if the patient is urged to move quickly in order to complete a task.

Perell et al. (2001) discussed the importance of the FRAT in determining a patient's risk for falls. FRATs have been in use for decades because these tools are easy for nurses to complete in a timely manner to categorize a patient at low, medium, or high risk for falling. The FRAT is usually completed upon admission and then once per shift, according to the hospital's policy. The MFS can be completed in less than one minute and Perell et al. (2001) found the MFS to have an interrater reliability of 0.96 in one review and 83-100% in a second review. The MFS was also found to have a sensitivity and specificity above the median which suggests that this tool is reliable in categorizing patients at risk for falls. Perell et al. (2001) suggested that more research be completed in order to determine the frequency a FRAT should be completed as well as defining and linking patient specific interventions with patient specific fall risk factors.

In a systematic review and meta-analysis conducted by Haines, Hill, Walsh, and Osborne (2007), blind reviewers assessed the methodology of multiple sources and categorized the findings into a four-point system for FRAT. Haines et al. (2007) described the defining factors of FRATs as presented in multiple studies and classify the tools as predictors of falling and assessment tools that look at factors that contribute to the patient's risk for falling.

The pooled analysis performed by Haines et al. (2007) showed the MFS to have moderate predictive accuracy. The MFS had a pooled Youden index of 0.2. The authors stated that the MFS provided moderate accuracy when the tool was used in a variety of settings but suggest that it may have lower accuracy when used in more patient specific groups (Haines et al., 2007).

Healey and Haines (2013) assessed the predictive values of the MFS in an acute care setting. The authors gathered data from April 2011 targeting specifics such as: recent MFS that had been completed, patient age, hospital unit specialty, and any falls recorded in a patient's note or incident reports. Healey and Haines (2013) examined the accuracy of the MFS using sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV). The total predictive value (TPV) was calculated using the Youden index.

The authors found that the MFS was more predictive with patients scoring greater than or equal to 55. However, Healey and Haines (2013) also found that the sensitivity of the MFS with patients who scored  $\geq 55$  was poor with only 58.6% of fallers identified as risk for falling and 41.4% of fallers were not identified. The PPV was 21.0%, which indicated one in five people who were identified as risk for falling actually fell during the week, and four out of five did not (Healey & Haines, 2013). While the MFS proved to be significantly better at predicting falls, the authors suggested additional studies should be conducted on incorporating patient specific interventions that have been proven effective when used with a successful FRAT (Healey & Haines, 2013).

### **Post Fall Huddles**

Oliver (2004), Jorgensen (2011), and Davison, Bond, Dawson, Steen, and Kenny (2005) discuss the importance of having multiple steps in a fall prevention protocol in their articles on fall prevention. The first step in any fall prevention protocol should be the FRAT. While it is

important to perform a falls risk assessment, Willis (1998) surveyed nurses and found that only three percent of those surveyed actually performed the falls risk assessment on his or her patient. Willis (1998) also suggested that the performance of a falls risk assessment depends on the nurse's skills, rather than the effectiveness of the FRAT. There are times that patients who are identified as risk for falling still fall despite being categorized as medium or high risk for falling. The majority of the literature reviewed suggests the effectiveness of a multifaceted fall program as being most successful but there are limited studies on the use of PFH specifically. Research suggests the importance of a multifaceted fall prevention protocol in targeting patient specific interventions. Not every fall can be prevented, which is why it is important to implement a PFH for the cases where patients do experience a fall.

An after-action review (AAR), also called a debrief or huddle, is a professional dialogue after an event that focuses on performance standards and enables team members to identify what happened, why it happened, and how to prevent future incidents (United States Agency for International Development, 2006). Recent research suggests that effective post-event reviews should provide for (a) data verification, feedback, and information sharing; (b) a framework that would allow team members to critically reflect on the event, challenge implicit assumptions, and understand why something is working or not working; and (c) establishing common goals and future action plans to prevent similar occurrences in the future (Eddy et al., 2013; DeChurch & Haas, 2008; West, 1996). The Institute for Healthcare Improvement (Boushon et al., 2008) and the Institute for Clinical Systems Improvement (Degelau et al., 2012) identify post-fall huddles, a form of AAR, as a best practice and essential component of a hospitals' fall risk education program.

Reiter-Palmon, Kennel, Allen, Jones, and Skinner (2015) conducted a study that provided a better understanding of naturalistic decision making in the health care setting and how after-action reviews (AARs) could be used as an educational tool for staff to decrease the number of errors occurring in the health care field. Seventeen hospitals participated in this study, with assessment data from 226 falls over a 16-month period included in the data.

The primary goal of the PFH in this study was to identify factors leading to the patient fall and exploring additional interventions/options that should be implemented in order to prevent a reoccurrence of the event (Reiter-Palmon et al., 2015). After a patient fall occurred, staff from the participating facilities was expected to perform a self-guided PFH, based on the unique AAR form – a PFH (Appendix C) developed by the researchers. The PFH form includes: (a) any previous patient falls during the current admission (yes or no), and if yes, a description of the interventions in place to minimize fall risk; (b) the preventability of the fall; (c) staff included in the huddle (including patient, family/caregiver); (d), additional comments regarding the huddle; and (e) description of changes to be made to reduce the patient's fall risk.

The authors collected and evaluated data on the use of the PFH over three different time periods: from August 2012 to January 2013, February 2013 to July 2013, and August 2013 to November 2013. Two of the four hypothesis tested were relevant to the proposed capstone project: a) use of self-guided PFHs will increase over time; and b) implementation of guided PFHs will be related to a reduction in the proportion of unassisted falls and a reduction in the proportion of injurious falls over time (Reiter-Palmon et al., 2015, p.326).

Overall, 59.7% (n=135) of the 226 reported falls had a corresponding post-fall huddle. A chi-square analysis of the data revealed a significant relationship between the use of PFH and the project's time period  $\chi^2 (2, N = 226) = 35.56, p < .001$ . The proportion of fall events that

included a post-fall huddle increased from <40% to >80% over time. Trends indicated an increased proportion of assisted falls with post-fall huddles over the project duration and a decrease in the number of falls with injury after the implementation of the PFH (Reiter-Palmon et al., 2015).

According to West (2015) a PFH should be conducted within 24 hours of the event. Performing the PFH within a timely manner allows those involved to determine what interventions were already in place, prior to the event, and what interventions need to be added to the patient's plan of care to prevent the event from reoccurring. It is important to note that PFHs are a collaborative process and should involve multiple disciplines in order to be successful (West, 2015). The post-fall huddle procedures developed for this capstone project can enhance collaboration among the multi-disciplinary members of the Cabell Huntington falls team currently involving physical therapy, occupational therapy, pharmacists, clinical coordinators, etc.

Moreland et al. (2003) performed a systematic review of the literature to provide EBP guidelines for assessment and treatment of secondary prevention of falls. Secondary prevention can be defined as preventive measures that are implemented after a fall occurs. Secondary interventions are meant to prevent future falls from occurring. Substantiated by information from 46 risk factor studies and 37 randomized controlled trials, the recommended practice guideline consists of assessment items and recommended interventions for both community and institution dwelling older adults who have fallen. Patients who have fallen need to be assessed for specific risk factors and clinical indicators to determine relevant management options.

Wolf, Costantinou, Limbaugh, Rensing, Gabbart, and Matt (2013) conducted a project aimed at reducing patient falls in three oncology units. The project's main goal was to decrease

the number of falls and falls with injury by 50% and 30%, respectively. The authors implemented a standardized process for fall assessment, interventions, and post-fall investigations. The authors chose a rapid improvement event technique for their project implementation, as this technique correlated with the hospital's Lean methodology.

Wolf et al (2013) found that the oncology units were already conducting PFHs but all units were using different processes. The units were then provided with one form to use during the PFH that would allow the staff to investigate the fall. The PFH would be staff led and conducted within 60 minutes of the event. If this was not achievable, the PFH would be performed within a 48 hour time period by the unit's advanced practice nurse. Some of the information collected during the PFH included: reason for getting up when the fall occurred, medications, environmental conditions, fall risk assessment score, types of interventions that were in place, etc. (Wolf et al., 2013). Once the PFH was complete, the data collected was placed in a secure database for the risk management team to view. The data was analyzed and progress reports and action plans were created for the units.

Using continuous improvement methods to standardize the fall prevention protocols, this hospital project resulted in a 22% decrease in total falls and a 37% decrease in falls with injury. While these percentage values did not meet the overall goal of the authors' project, the percentage values still show the success of this project and the importance of including multiple steps in a fall reduction program – including a post-fall assessment (Wolf et al., 2013).

Gray, Johnson, and Strumpf (2005) state that the post-fall assessment is a derivative of two models: the medical model and the illness representation model. In combination, these models create a tool, PFH, which is able to assist in identifying causes of falls. If the cause of a patient fall is clearly identified, the plan of care can then become more individualized and a

reduction in falls occur. In evaluating why a fall occurred during a PFH or assessment, it is important to include the patient and obtain his or her perception of the fall, identify symptoms that may have contributed to the fall, perform a thorough head to toe physical exam, and synthesize relevant information (Gray, Johnson, Strumpf, 2005). All of these steps are included in the national recommendations for identifying causes of falls. Additionally, there are no specific guidelines outlining a post-fall assessment, which causes individuals or inpatient units to derive their own approach when performing a PFH. Gray et al. (2005) suggested a more organized approach that targets specific events such as patient history, symptoms, situational context, and physical examination of the patient.

Gray et al. (2005) developed a stepwise approach for fall evaluation aligning with recommendations and fall causes outlined in the literature. The first step in performing a PFH begins with obtaining the patient's personal evaluation of the event. The second step encourages participants to recreate the situation surrounding the event. Third, the participants should identify the patient's symptoms and evaluate the patient's past medical history (PMH). The fourth and fifth step require the RN or person in charge of the PFH to perform a physical examination and perform a synthesis of the information obtained during the PFH – this last step helps to create an action plan (Gray et al., 2005).

The stepwise approach for evaluation of falls attempts to gather the important information collected during the PFH and synthesize the information as a whole – allowing the staff to be more cognizant of fall related symptoms (Gray et al., 2005). Including the patient's account of the events surrounding the fall allows the assessment to be more individualized. Gray et al., (2005) suggest that the information obtained during a PFH in conjunction with the

patient's account of the event "...can best direct future interventions aimed at education, demystification of falls, and the secondary prevention of falls" (n.p.).

Because patient falls cannot be prevented altogether, Kelly and Dowling (2004) suggest that fall rates can be improved by using proven, safe methods that will improve the patient's overall health status. Methods of assessment/evaluation that these authors suggest to implement, not only when a patient is identified as a risk for falls but after a fall occurs, include: medication review, gait and balance review, alarms/restraints, physical environment, medical equipment, and anticipatory nursing. Other information that should be included in a post-fall assessment/huddle: the circumstances surrounding the event, symptoms leading up to the event, and any previous falls experienced by the patient (Kelly & Dowling, 2004).

Research suggests there is a lack of consistency in the style of performing a PFH (Bonner, 2006). Because post-fall assessments have the opportunity to determine the immediate cause of a patient's fall, it is important to incorporate this type of assessment in a fall program focusing on quality improvement and patient safety. A PFH would include the interdisciplinary team and can be used for educational purposes to new members of the healthcare team – in the form of case studies.

### **Agency Description**

#### **Setting**

Cabell Huntington Hospital is a 303-bed hospital serving more than 29 counties in West Virginia, eastern Kentucky, and southern Ohio ("About Us", 2014). CHH is affiliated with Marshall University Schools of Medicine and Nursing and is highly regarded for its teaching quality. Unit 2 North BedTowers (2NBT) is a 38-bed medical/surgical unit.



**Target Population**

The nursing staff and other members of the patient care team on 2NBT made up the targeted population for this project. The 2NBT staff includes 35 registered nurses (RNs), six licensed practical nurses (LPNs) and 11 patient care assistants (PCAs) (personal communication, A. Bullington, June 4, 2015).

**Congruence of Capstone Project to Organization's Mission, Goals, and Strategic Plan**

The improvement of the Administrative Policy Patients at Risk for Falls: Assessment and Intervention is congruent with CHH's mission and vision. The hospital's mission is "to meet the lifetime healthcare needs of its customers while providing an atmosphere of service, quality and efficiency" (CHH, 2011). Providing an atmosphere of service and quality and meeting healthcare needs is an important mission, improving the fall reduction program is a process in which this mission can continue to be achieved.

**Stakeholders**

The people most interested in the improvement of the fall reduction program at CHH included Becky Edwards RN – Senior Fracture Program Coordinator/Falls team leader, Dr. Frank Shuler, M.D. - Physician Champion, Amy Bullington RN, MSN, nurse manager of 2NBT and the staff of 2NBT. Additionally, the patient and his or her family were important stakeholders as well as the director of quality and performance improvement, Denise Gabel-Comeau. Each of these individuals has a desire in increasing patient safety and reducing the number of patient falls.

The number one driving force for this project was patient safety. Additional forces that drove the need for improvement were quality of care and funding/reimbursement. A large portion of CHH's funding comes from CMS; changes needed to be made throughout the facility

to meet the clinical/quality measures (CQMs) established by CMS. Reducing risk of patient harm resulting from falls was identified as one of the national patient safety goals, thus playing an important role in support for the implementation of a fall reduction plan.

### **Statement of Mutual Agreement**

The 2NBT manager, Amy Bullington, has completed the statement of mutual agreement. This statement can be found in Appendix D.

### **Project Design**

The purpose of the capstone project was to implement two new processes for the current CHH falls reduction program (a) implement the MFS for properly identifying at-risk patients, and (b) holding post-fall huddles for patients who experienced inpatient falls. The project involved the following: (a) education of nursing staff on the MFS and post-fall huddles; (b) evaluation of educational process (completion of learning modules); (c) post-education evaluation of the nurses' competency in the use of the MFS; (d) implementation of the revised CHH Falls Assessment and Management Protocol; (e) comparison of pre and post-implementation fall rates; and (f) evaluation of the Falls Assessment and Management Protocol implementation process.

### **Pre-Implementation Falls Risk Assessment and Management Process**

Prior to implementation of the EBP interventions for this project, an RN performed a falls risk assessment on every patient admitted to the facility. Using a locally developed CHH instrument, the falls risk assessment was completed upon admission, every shift, and when there was a change in the patient's condition. The CHH falls risk assessment was a modified version of the MFS, which did not have known validity or reliability properties. The inaccuracies in

identifying patients who experienced a fall while an inpatient at CHH were likely due to the inability of the prior FRAT (Table 2) to accurately detect these patients.

Table 2

*2NBT Quarterly data*

	2014 Quarter 3	2014 Quarter 4	2015 Quarter 1
Total falls	28	18	27
# Of fallers with FRAT complete	28	18	27
# Of fallers identified as fall risk	21	13	15
# Of fallers not identified as fall risk	7	5	12

### **Project Methods**

#### **IRB submission process**

Marshall University Institutional Review Board (IRB) for expedited review. Approval was granted and an IRB Authorization Agreement Eastern Kentucky University recognized Marshall University as the project leader's IRB of record.

#### **Measures and Instruments**

The MFS competency was developed by Partners HealthCare Fall Risk Taskforce in an attempt to test nurses' level of competency related to the MFS (AHRQ, 2012). The competency required nurses to read a case study scenario and complete a MFS on the case study patient. The competency was completed by members of the 2NBT staff prior to implementation of the MFS on the unit. The competency was administered via the online learning center, HealthStream, used by CHH. Staff receives credit for completion of the required competency and completion was verified by competency reports in HealthStream learning center.

Inpatient falls are currently documented using incident reporting programs. This information is sent to the unit manager where the fall occurred and the manager reports the falls data to the director of quality and performance improvement. The unit manager is also responsible for inputting the data into the NDNQI database. The director of quality and performance improvement is able to access the information from the NDNQI database and create spreadsheets for each specific unit, the hospital as a whole, and the hospital's falls numbers in comparison to national benchmarks. There will not be any changes made in the current process of reporting patient falls at CHH except to add the completed PFH worksheets for review.

### **Implementation**

The implementation for the improvement to the fall prevention program was divided into three phases: (a) Phase I – education; (b) Phase II – implementation; and (c) Phase III – data collection. This project was implemented in collaboration with the Cabell Huntington Hospital Falls Team efforts to improve the fall prevention and management protocol.

***Phase I: Morse Fall Scale and Post Fall Huddle Education.*** Education was provided to the staff on 2NBT prior to implementing the MFS and PFH interventions. The staff was provided the MFS training module (Appendix E) delivered via the CHH online learning system, Healthstream. Healthstream Learning Center allows leadership/management to track the completion of the assigned learning. The estimated time for completion of the training module was 30 minutes or less. The Morse Fall Scale Training Module was created by Partners HealthCare System Fall Prevention Task Force and included detailed objectives, definitions, and competency questions (Morse, 1997).

The project leader provided education via power point presentation during mandatory staff meetings in regards to PFHs (Appendix F). Educational information for PFHs was obtained

from the National Falls Toolkit presented by the U.S. Department of Veterans Affairs (2014). The toolkit included a falls decision tree, falls decision tree typology, PFH/after action review, and two case studies. The existing CHH falls team was educated on the use of the MFS and PFH and worked with the project leader to improve the current protocol.

***Phase II: Implementation.*** The project implementation time was from September 29, 2015 – October 29, 2015. During Phase II, the RNs on 2NBT completed the MFS FRAT on all patients admitted to the unit during this 30-day period. The MFS was integrated into the electronic charting program in order for the RNs on 2NBT to accurately complete the fall risk assessment. Additionally, if a patient experienced a fall, the primary care nurse and charge nurse conducted a PFH and completed the PFH worksheet and returned to the unit manager for collection.

The PFH worksheet was based on Reiter-Palmon et al.'s (2015) suggestions (Appendix B). The items included in the PFH form (Appendix G) were used by the project leader and staff on 2NBT are included in Figure 2.

Figure 2

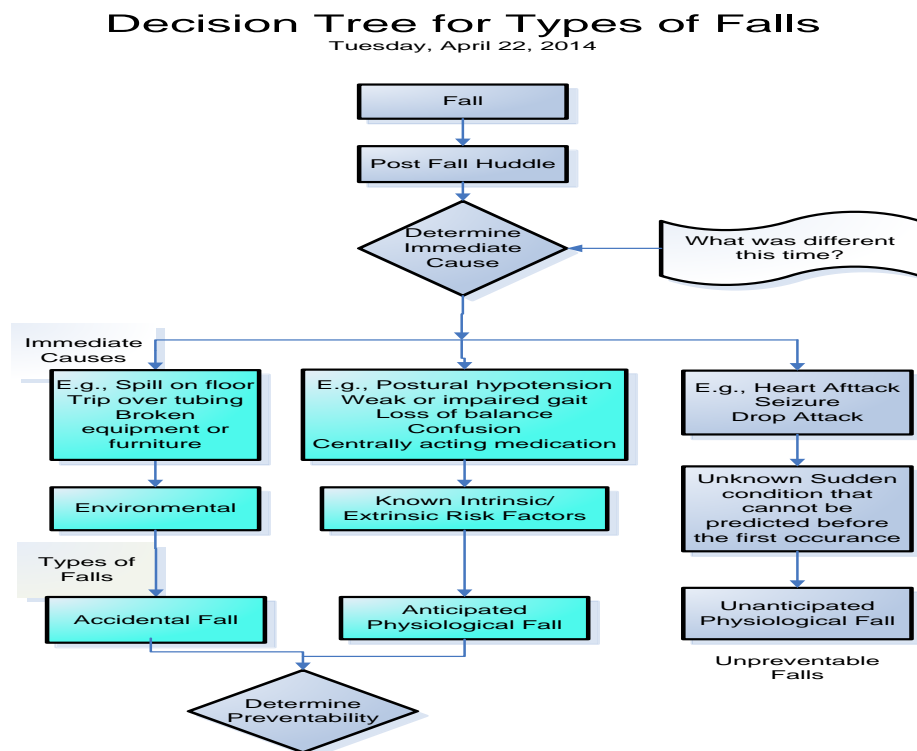
*PFH Inclusion Information*

Has there been a previous fall during this admission?
What interventions were in place to minimize the risk of fall?
How preventable was the fall?
How could the fall have been prevented?
Identify people included in the PFH
What was discussed during the huddle
Additional comments?
What actions will be taken to prevent another fall?

The US Department of Veterans Affairs (2014) has partnered with the VISN 8 Patient Safety Center to create an algorithm outlining the decision making process for classification of the fall and type of fall. The algorithm allows providers to determine type of fall and preventability of fall. The four step decision process begins with the PFH then moves to determining the immediate cause of the fall, followed by determining the type of fall and lastly, determining preventability of fall (USDA, 2014). The algorithm for determining type of falls and preventability is presented in Figure 3.

Figure 3

*Determining Type of Falls and Preventability Algorithm*



**Phase III: Data Analysis.** Nurse's post-education competency of the MFS was evaluated using the competency quiz located within the Morse Fall Scale Training Module (Appendix H). All MFS FRATs and PFH worksheets that were documented during Phase II

time period were audited from patient charts by the project leader and analyzed for frequency of completion and accuracy. Actual patient fall rates for the 2NBT unit during the 30-day implementation phase are included in the project analysis.

## **Results**

### **Staff Training**

During the 30-day project period, only eight nurses of the 39 (20.51%) employed on 2NBT completed the online MFS training and competency test. All eight received a passing score – indicating competence in the use of the MFS. The majority of the nurses who have completed the training are full-time day shift nurses.

### **FRAT Completion**

The chart audits conducted on October 19, 2015 (nearly three weeks into the implementation phase) and October 29, 2015 (after four weeks of implementation) revealed a 100% completion rate of the MFS assessment by unit nurses. On October 19, 38 patients were present on 2NBT. Of the 38 inpatients on 2NBT, 24 (62%) were identified as high risk for falls, scoring 35 or greater on the MFS assessment. On October 29, 37 patients were present on 2NBT. The chart audit on this day revealed that 24 of 37 (65%) patients were identified as high risk for falls; scoring 35 or greater on the MFS completed by the nurse.

### **Fall Rates and PFH Documentation**

The number of patient falls that occurred on the 2NBT unit during the implementation phase was five. The number of patients that fell during the implementation phase (N=5) is an improvement over the August 2015 fall rate on 2NBT, which was 7. A chart audit of the August 2015 falls revealed that three out of seven patient (43%) were not identified as a fall risk using CHH's pre-implementation FRAT.

The number of patients who fell during the implementation phase that were identified as a high risk for falls using the new MFS FRAT was two out of five (40%). The remaining three patients that scored less than a 35 on the MFS had scores of 20, 20, and 15 respectively. PFH were conducted in all five cases and document completion rates was 100%. Descriptive data from the PFH documentation provided information on fall circumstances. Four of the falls occurred when the patient was alone, unassisted by the staff. Falls that occurred at night time were three (60%) and two were elimination-related (40%). Other significant information found in the PFH documents included patient lab results that may have been related to the incident and medications that the patient had received within the previous 24-hour time frame. The fall circumstances are summarized in Table 3.

Table 3

*Falls During Project*

Pt	Conditions		Activity	Interventions			Follow up	
	MFS Score	Night time		Fall star on door	Bed in low position	Non-skid socks on	Bracelet on	
1	20	X	Going to restroom			X		PT consult made
2	20	X	Unable to locate call light		X			
3	35		Patient had received Ambien previous shift	X	X	X	X	
4	15	X	Patient needed assistance					
5	100		Going to restroom	X	X	X	X	



### **Discussion**

A patient's risk for falling can change rapidly and requires vigilance and continuous improvement processes to sustain patient safety. The effectiveness of using a valid and reliable risk assessment tool and post-event reviews to decrease fall rates has been supported in the literature (Perell et al., 2001; Haines et al., 2007; Oliver, 2004; Jorgensen, 2011; Davison et al., 2005). The results of this project indicate a decrease in number of patient falls on 2NBT from previous months.

Incorporating the new MFS FRAT into the computer charting system at CHH provided structure to this required assessment. The Falls Team incorporated hard stops into the computer charting system, requiring certain fields to be filled out in order to save the assessment as complete. While the MFS FRAT completion is being accomplished for every patient, the completion rate of the MFS competency by the nursing staff was low at the end of the 30-day project period. The MFS competency was added to the Healthstream learning program just one day prior to implementation of the evidence based interventions and it is difficult to evaluate whether staff are using the MFS correctly in this short time period. However, the Falls Team recognizes the need for the nurses to complete the MFS thoroughly and accurately and will be making the MFS competency mandatory over the next two months.

The PFH document completion was 100% during the implementation phase. The nursing staff was receptive of the pre-implementation education regarding PFH, presented by the project leader. The nursing staff was engaged during education, asked questions and were eager to participate. Additionally, the physical therapists that spend the majority of his or her working time on 2NBT were educated on the use of PFH documents. The primary nurse or charge nurse was the leader of the PFH when these occurred and was responsible for completing the PFH

worksheet. The nurses who participated in the PFH provided positive feedback with suggestions for including more people during the huddle (i.e. assistant director of nursing, Falls Team facilitator, physician champion, etc.). The suggestion has been made to incorporate the PFH worksheet as part of the electronic computer charting. This would help increase its usage and consistency because the nurses would be prompted to complete a PFH when falls occur.

The staff's adherence to other care components of the fall prevention protocol were not analyzed during this project. Additionally, the data collection period was only four weeks long which may not have been enough time to obtain significant quantitative data.

### **Implications**

Fall prevention and management programs are multifaceted and complex. Involvement and support at all levels of the organization are required. CHH's Falls Team has engaged the administrative and clinical leadership as well as the bedside staff in the patient safety improvement process. This capstone project provided the initiative to pilot an evidence-based assessment tool and post-event reviews for the fall prevention and management program. At this writing, the entire CHH organization has adopted the new MFS. Working collaboratively with the Falls Team facilitator was critical in communicating with key people and moving the adoption forward.

Education of the staff provided evidence for fall prevention tools and training in the accurate use of the tools. The required completion of the risk assessment form in the computer charting system facilitates adherence to the fall prevention protocol. The staff's accurate use of the MFS needs to be monitored closely and feedback provided to ensure effectiveness of this tool. The MFS competency test is available and can be required periodically. Ongoing monitoring of subsequent interventions implemented by the staff to prevent falls and frequent

dissemination of unit-specific fall data is needed to ensure fidelity to the protocol. More information is needed on the context of falls to evaluate patient safety practice.

Documentation from post-fall huddles provided valuable descriptive data about fall circumstances. In addition to ensuring that staff are aware that a fall has occurred, this process serves as an opportunity to discuss learning opportunities related to the event and helps nurses create an optimal individualized plan of care using targeted interventions to keep the patient safe for the remainder of his or her stay. The post-fall huddle process can be further developed for future use. The Falls Team facilitator can follow up with any inpatient fall that occurs in the facility and encourage units to conduct a PFH. If the Falls Team facilitator is able to continue the use of PFH documents for a longer time period, it may be beneficial to present this idea as a pilot study and expand the use of PFH within the organization. This would require technical support as the PFH document would need to be built into the computer system and a prompt to complete a PFH would need to be added as well. In doing this, one could investigate whether or not there is any additional correlation between PFH and a decrease in repeated falls.

The CHH Falls Team will continue to meet bi-monthly. The team will work to conduct RCAs as well as discuss the new FRAT and any additional interventions that may need to be added.

### **Summary**

Inpatient falls continue to be the number one adverse event occurring in hospitals across the world (Quigley & White, 2013). Each year, between 700,000 and 1,000,000 people in the United States fall in the hospital. Falls resulting in injury lead to increased health care utilization. There is considerable evidence that a multi-faceted approach is effective in reducing inpatient falls and falls with injury (AHRQ, 2012; Oliver, 2004; Jorgensen, 2011; and Davison et al.,

2005). CHH has invested the human and technical resources needed to overcome the challenges associated with developing, implementing, and sustaining a fall prevention program. The additions of the new MFS and huddles demonstrated improvement in the comprehensive approach to prevention and management of patient falls. In addition to the attention on unit-based patient safety and quality care, the more comprehensive falls protocol will be in alignment with TJC and NDNQI recommendations. This capstone project was successful in heightening the 2NBT staff's awareness of risk and needed precautions and providing a structure and processes for fall events. These are critical elements in strategizing for patient safety improvement.

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## Appendix A

### Administrative Policy Patients at Risk For Falls: Assessment and Intervention

#### SECTION II POLICY 27

#### ADMINISTRATIVE POLICY PATIENTS AT RISK FOR FALLS: ASSESSMENT AND INTERVENTION

##### I. POLICY

It is the policy of Cabell Huntington Hospital to perform assessment of the patient's risk for falls.

##### II. PURPOSE

- A. To identify patients who are at risk for falls.
- B. To implement appropriate preventive measures for patients identified at risk for falls.
- C. To provide education to patient/family and/or significant others regarding fall prevention.

##### III. INPATIENT PROCEDURE

- A. On admission, the nurse shall assess all patients, two and older, for risk factors of falls in the electronic medical record (EMR)
  - 1. Patients with special needs may be identified as at risk for falls regardless of the falls assessment.
- B. Patients identified as at risk for falls shall have the Safety and Fall Risk plan of care implemented to document interventions needed to prevent falls. Basic care for all patients at risk of falls includes:
  - 1. Place bed in low position
  - 2. Keep two side rails up
  - 3. Instruct patient to call for assistance
  - 4. Keep floors free of clutter
  - 5. Remove items that block exits or hallways
  - 6. Increase frequency of offering toileting and hydration assistance
  - 7. Maintain call light within reach
- C. Preventive care measures shall be implemented on an individualized basis and documented on the plan of care. Such measures include the following as appropriate:
  - 1. yellow arm band
  - 2. Falling Star sign at the bedside
  - 3. inform patient / family that bedside table rolls, and may not be used for support when standing
  - 4. use anti-tip devices on wheelchairs, tips of canes, & walkers
  - 5. assist to toilet every 2 to 4 hours
  - 6. assist to toilet every 4 to 6 hours
  - 7. do not leave patient unattended when out of bed
  - 8. move close to the nurses station
  - 9. re-orient with each interaction
  - 10. Diversional activities
  - 11. keep lights on in the room at all times

12. encourage patient to verbalize fear of falling
  13. teach safety measures
  14. monitor for orthostatic hypotension, dizziness, syncope, record and report
  15. teach patient how to change position slowly
  16. ambulate only with supervision
  17. ambulate patient frequently
  18. sit in chair frequently
  19. redirect patient with each attempt to get out of bed or chair
  20. use stop signs or other directional signs for the patient
  21. reposition every 2 hours
  22. assist patient with transfer and toileting
  23. wear hearing aid or glasses at all times
  24. keep a clear path to the bathroom for patient
  25. use bedside commode
  26. use environmental prosthesis appropriately (clocks, proper foot wear, gait belts)
- C. Upon admission, all patients, their family and/or significant others shall be given the opportunity to view the "Call, Don't Fall" video. "Call, Don't Fall" viewing times on the Hospital educational channel shall be provided. Booklets containing written "Call, Don't Fall" information shall be provided to patients, family and/or significant others upon admission.
- D. If the patient remains at high risk for falls despite these interventions, the patient, family and/or significant other shall be advised that the patient requires 24 hour direct supervision.
1. Direct 24-hour supervision is to be provided either by the family or by sitters provided at the patient's and/or family's expense.
  2. Any persons approved by nursing personnel to stay with patients after normal visitation hours shall follow guidelines as outlined in the Administrative Policy and Procedure Manual, Section II, Policy 6, "Visitation Privileges".

#### IV. ANCILLARY DEPARTMENT RESPONSIBILITIES

- A. All departments shall ensure that their employees are aware of the significance of yellow patient armbands, and Falling Star cards located at the head of patient beds.
- B. All Hospital employees who come upon patients with any of the above identifications outside of the patient's room shall take the following steps to ensure that the patient is protected from the risk of falling:
1. Determine whether the patient is attended by Hospital personnel; if not,
  2. Notify the unit on the patient's armband as to the name and location of the patient;
  3. If appropriate, escort the patient back to their unit/room; or
  4. Remain with the patient until an appropriate escort is available.
- C. Other special precautions shall be followed according to specific departmental policies as appropriate.

#### V. REASSESSMENT

- A. Every shift or when there is a change in patient condition, the patient shall be reassessed for falls risk.

- B. Patients who are identified at risk for falls for the first time upon reassessment shall have identification, education and preventive care measures implemented as described in Section III above.
- C. Patients who were identified at risk for falls upon initial assessment and who are no longer at risk upon reassessment shall have their identification and preventive care measures discontinued in their plan of care.
- D. Patients who continue to be a fall risk will have the interventions needed to keep them safe reviewed each shift and if needed revised to protect the patient.

#### VI. DOCUMENTATION

- A. Initial assessment of the patient's risk for falls shall be documented in the EMR. Reassessment will be documented each shift in the Ongoing Assessment. Special need information shall be individualized and documented in the Safety and Falls Risk Plan of Care.
- B. Education of patient, family and/or significant other shall be documented in the EMR.
- C. Documentation of patient, family or significant other being provided falls booklet and/or video viewing information shall be documented in the EMR.
- D. If a fall occurs during hospitalization, the nurse shall complete a Datix Report from the CHH Intranet.

#### VII. OUTPATIENT

- A. Because of the varied types of outpatient facilities and clinical reasons for the visit each outpatient area will implement fall reduction strategies as appropriate
- B. Patients in the outpatient setting will be assessed based upon their presentation (i.e. unstable gait or use of crutches) and/or reason for visit (i.e. dizziness or previous fall). When patients are assessed as having an increased risk for falls the following precautions will be implemented:
  - Provide patient and family education about fall precautions as appropriate
  - Use appropriate transfer techniques when moving patients or assisting with ambulation
  - Re-orient patients if they show signs of confusion, encourage family to sit with/accompany patients who become confused or disoriented
  - Encourage patients to notify staff if they need assistance entering or exiting the building or if they need assistance moving about the facility
- C. General fall precautions:
  - Furniture and equipment is sturdy and wheels kept locked
  - Furniture and equipment is suitable for the specific needs of the area
  - Commode/seat lifts are properly installed (not loose)
  - Door handles are secure
  - Handrails properly secured to wall
  - Flooring is level and free of tripping hazards, such as broken tiles or thresholds that are above the level of the floor
- D. Physical Layout / Waiting areas:
  - During inclement weather staff shall monitor the entrances to buildings and parking lots

for fall hazards (ice, snow, water, leaves etc) and shall report appropriately

- Keep hallways and patient areas are well lit
- Keep hallways and patient areas uncluttered and free of spills
- Keep doors locked when unattended
- Assure tables and chairs are sturdy
- Assure exit signs exist and are visible

E. Treatment areas:

- Patient rooms are to be set up in a way that minimizes the risk of falling
- Keep the call bell/light within reach if applicable
- Keep beds or carts in low position with wheels locked when not mobile
- Arrange room furniture to allow patient space when walking and grab bars/hand rails are accessible
- Provide the patient with orientation to the room, intercom system, call light use, and falls prevention and procedure as applicable

F. Staff Responsibilities:

- Unsafe situations are to be dealt with by immediate action and/or notifying the appropriate staff to intervene in the situation.
- Provide physically safe environment (i.e., eliminate spills, clutter, electrical cords, and unnecessary equipment).
- Observe for and report fall risk concerns promptly

G. Patients receiving medications or sedation:

- Patients are encouraged to wear footwear if able
- Assure clothing does not drag on the floor
- Remain with the patient when assisting him or her to the bathroom
- Offer assistance to the bathroom, commode, or use of bedpan until the patient is awake
- Assess the patient's need for physical and occupational therapy consultation and discharge planning
- Check on the patient hourly or more frequently
- Assess the need for one-on-one monitoring and arrange as needed
- Escort the patient to their vehicle in a wheelchair post sedation

Adopted:	5/26/99
Reviewed:	11/14/01, 6/25/08,
Revised:	3/19/04, 6/22/05, 7/10, 6/11, 08/31/2011 5/23/2013, 7/23/14

**Appendix B****Root Cause Analysis****Root Cause Analysis- FALLS**

Review Date:

Reviewer:

Fin #:

Date of Admission:

Age:

Weight:

Admission Diagnosis:

HX/Co-morbidities:

Fall Date/Day/Time:

Unit:

Source/location of Fall:

Medications past 24 hours:

Fall was (circle one) Witness    Un-Witnessed

Brief Description of incident:

Was PT or OT consulted prior to or after fall?

Patient Factors:

Mental Status:Hearing:Vision:Activity:Bowel/Bladder:DevicesFall risk assessment:

Performed prior to Fall

Y or N

What was the score?

Time since last Fall Risk Assessment:

Pt. determined at Risk for Fall    Y or N

Was Falls Care Plan Implemented?

Y or N

Falling Star: Falls prevention protocol, ID band and sign in place:    Y or N

Injury Level/Interventions:

Revised: 9/14 SE

## Appendix C

## PFH-After Action Review (AAR)

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## Appendix

## Post Fall Huddle Documentation

A Post Fall Huddle is one suggested best practice for reducing falls. Post fall huddles provide a mechanism to learn from falls by immediately assessing the situation and reviewing the event with the people involved, including the patient and family members, as well as determining what can be done at the bedside to prevent another fall from occurring.

**Directions:** To be completed after ALL patient falls as soon as possible after patient care is provided but prior to leaving the shift.

1. Has this patient fallen previously during this admission?

☐ Yes  
☐ No  
☐ Unknown

2. If Yes, what interventions were in place to minimize the risk of a fall?

3. How preventable was the fall? CHECK ONE

☐ Almost certainly could have been prevented  
☐ Likely could have been prevented  
☐ Likely could not have been prevented  
☐ Almost certainly could not have been prevented  
☐ Unknown

4. How could the fall have been prevented?

5. Who was included in the huddle? CHECK ALL THAT APPLY

☐ Patient ☐ Primary Nurse ☐ COTA ☐ Physical Therapist  
☐ Family/Caregiver ☐ CNA ☐ Pharmacist ☐ Physical Therapy Assistant  
☐ Charge Nurse ☐ Occupational Therapist ☐ Pharmacy Tech ☐ Quality Improvement Coordinator  
☐ Other: \_\_\_\_\_

6. What factors were discussed in the huddle?

☐ Were there task errors?(e.g. planned interventions were not in place as intended)

Please describe: \_\_\_\_\_

☐ Were there judgment errors?(e.g. strategy used to assist with transfers/gait was inappropriate)

Please describe: \_\_\_\_\_

☐ Were there care coordination errors?(e.g. fall risk status not communicated to all parties)

Please describe: \_\_\_\_\_

☐ Need to consult with Physical Therapy about balance/transfers/mobility?

Please describe: \_\_\_\_\_

☐ Need to consult with Pharmacy about medications?

Please describe: \_\_\_\_\_

7. Additional comments regarding the huddle. \_\_\_\_\_

8. What actions will be taken to prevent another fall from occurring?

Thank you for contributing to patient safety and quality of care.

## Appendix D

### Statement of Mutual Agreement

#### Statement of Mutual Agreement for Capstone Project

The purpose of a Statement of Mutual Agreement is to describe the agreement between a designated clinical agency and the DNP student regarding the student's Capstone Project.

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#### I. General Information

Student Name: Ashlee Gallion  
Project Title: Improving a Fall Prevention and Management Program in an Inpatient Setting  
Agency: Cabell Huntington Hospital  
Agency Contact: Amy Bullington, MSN,RN

---

#### II. Brief description of the project Evidence Based Intervention

Literature supports the use of a multi-faceted fall prevention program as the most successful intervention for reducing and preventing in-patient falls (Choi, Lawler, Boenecke, Ponatoski, & Zimring, 2011; Von Renteln-Kruse & Krause, 2007).

A multi-faceted fall prevention plan begins with a successful Fall Risk Assessment Tool (FRAT) in properly identifying patients who are at risk for falling. The FRAT that has been shown to be the most valid in predicting a patient's risk for falls is the Morse Fall Scale (MFS) (Haines, Hill, Walsh, Osborne, 2007; Healey & Haines, 2013; Perell, Nelson, Goldman, Luther, Prieto-Lewis, Rubenstein, 2001; Harrington et al., 2010).

There are times that patients who are identified as risk for falling still fall despite being categorized as medium or high risk for falling and prevention strategies implemented. Patients who fall, especially elderly patients, tend to have a greater risk for experiencing a second or even third fall during the hospital stay. Despite interventions nurses implement to reduce these patients risk for fallings, it is crucial to discover the cause of the fall. Discovering the cause of the fall can ultimately prevent future falls (USDofVA, 2014). An after-action review (AAR) of a fall event, also called a debrief or huddle, is a professional dialogue after an event that focuses on performance standards and enables team members to identify what happened, why it happened, and how to prevent future incidents (United States Agency for International Development, 2006). Recent research suggests that effective post-event reviews should provide for (a) data verification, feedback, and information sharing; (b) a framework that would allow team members to critically reflect on the event, challenge implicit assumptions, and understand why something is working or not working; and (c) establishing common goals and future action plans to prevent similar occurrences in the future (Eddy et al., 2013; DeChurch & Haas, 2008; West, 1996). The Institute for Healthcare Improvement (Boushon et al., 2008) and the Institute for Clinical



Systems Improvement (Degelau et al., 2012) identify post-fall huddles, a form of AAR, as a best practice and essential component of a hospitals' fall risk education program.

**Purpose of the Project**

The purpose of this project is to implement targeted evidence-based fall reduction interventions to the existing CHH Administrative Policy Patients at Risk for Falls: Assessment and Intervention. The objectives of the project are to (a) implement the Morse Fall Scale as the new fall risk assessment tool and (b) implement post-fall huddles to evaluate fall events. The anticipated outcomes of these interventions include a decrease in number of patient falls per 1,000 patient days and a decrease in number of patients who fell and were correctly identified as at risk for falling

**Methods**

The MFS competency was developed by Partners HealthCare Fall Risk Taskforce in an attempt to test nurses' level of competency related to the MFS (AHRQ, 2012). The competency requires nurses to read a case study scenario and complete a MFS on the case study patient. Once the nurse has scored the patient using the MFS, the nurse will then be required to identify interventions to prevent falls based on the patient's falls risk score. Nurses will immediately be able to view the correct answers and rationale and compare to his or her answers. Once this has been completed the unit manager should be notified that the nurse has completed the competency.

Inpatient falls are currently documented using incident reporting programs. This information is then sent to the unit manager where the fall occurred and the manager reports the falls data to the director of quality and performance improvement. The unit manager is also responsible for inputting the data into the NDNQI database. The director of quality and performance improvement is able to access the information from the NDNQI database and create spreadsheets for each specific unit, the hospital as a whole, and the hospital's falls numbers in comparison to national benchmarks. There will not be any changes made in the current process of reporting patient falls at CHH. The only change in data collection will be including collecting completed PFH worksheets and identifying patients who have had repeated falls after a PFH worksheet has been completed.

Nurses will perform a competency on the MFS, located within the Morse Fall Scale Training Module. All MFS FRATs that are documented during the Phase II implementation time period will be analyzed for frequency and accuracy. All documented PFH worksheets will be analyzed for frequency and accuracy. Actual patient fall rates during the implementation phase will also be included in the project analysis. Data will be analyzed using SPSS version 21.

Student Name: Ashlee D. Gallion

Project Title: Improving a Fall Prevention and Management Program in an Acute Care Setting

**III. Agreement of written and oral communication**

The clinical agency for the capstone project is Cabell Huntington Hospital located in Huntington, West Virginia. The student will provide Cabell Huntington Hospital a copy her work once the capstone project is complete. The student will present the capstone project information during the next evidence-based practice conference held at Cabell Huntington Hospital.

No restrictions on discussion of any project or agency details noted.

**IV. Required Signatures:**

Ashlee D. Mallon  
Student

\_\_\_\_\_  
Date

\_\_\_\_\_  
Capstone Advisor  
Amy Bullinger  
Agency Representative

\_\_\_\_\_  
Date  
8/17/15

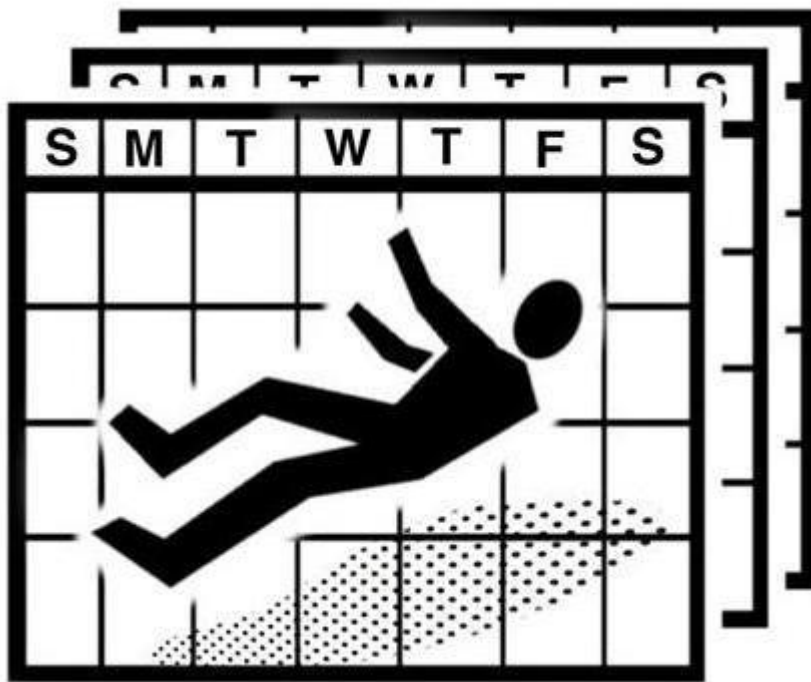
## Appendix E

### The Morse Fall Scale Training Module

#### The Morse Fall Scale Training Module

#### Partners HealthCare System Fall Prevention Task Force

*Based on J. Morse (1997). Preventing Patient Falls. CA: Sage Publishing Co.*



#### Objectives

1. What is fall risk assessment?
2. What are the areas of fall risk that are identified by using the Morse Fall Scale (MFS)?
3. How do I use the MFS to plan interventions to prevent patients from falling?

---

**What is Fall Risk Assessment?**

The Morse Falls Scale is a Fall Risk Assessment tool that predicts the likelihood that a patient will fall.

Should be done at least once a day and with change in patient status.

Provides the information needed to tailor interventions to prevent falls.

---

**What are the areas of fall risk that are identified by the MFS?**

What are the areas of fall risk that are identified by the MFS?

1. History of falling
  2. secondary diagnosis
  3. ambulatory aid
  4. IV therapy/heparin (saline) lock
  5. Gait
  6. Mental status
- 

**History of Falling**

**Score 0** if none of the following are true:

1. Patient has fallen during this hospitalization.
2. Patient has immediate history of falls within the past 3 months.

**Score 25** if one or more of the above are true.

---

- |                       |        |
|-----------------------|--------|
| 1. History of Falling | No 0   |
|                       | Yes 25 |

**Secondary Diagnosis**

**Score 0** if only 1 **active** medical diagnosis

**Score 15** if more than 1 medical diagnosis is active for current admission

- 
- |                        |        |
|------------------------|--------|
| 2. Secondary Diagnosis | No 0   |
|                        | Yes 15 |

**Ambulatory Aid**

**Score 0** if patient walks without a walking aid or uses a wheelchair or is on bed rest and does not get up at all.

**Score 15** if patient uses crutches or a walker.

**Score 30** if the patient walks clutching onto furniture for support (e.g., needs help, but does not ask or does not comply with order for bed rest).

## 3. Ambulatory Aid

**None/bed rest/nurse assist 0**

**Crutches/cane/walker 15**

**Furniture 30**

**Intravenous/Heparin (Saline) Lock**

**Score 0** if the patient does not have an IV, heparin (saline) lock or is not attached to equipment.

**Score 20** if the patient has an IV, heparin (saline) lock or is attached to equipment (e.g., monitoring equipment or Foley catheter).

- 
- |                             |        |
|-----------------------------|--------|
| 4. IV/Heparin (Saline) Lock | NO 0   |
|                             | YES 20 |

**Gait**

**Score 0** if the patient has a normal gait.

Walks with head erect.

Arms swinging freely at the side.

Striding without hesitation

**Score 10** if the patient has a weak gait.

☐ Stooped, but able to lift head without losing balance.

☐ If furniture required, uses as a guide (feather-weight touch).

☐ Short steps, may shuffle.

**Score 20** if the patient has an impaired gait.

☐ Difficulty rising from chair (needs to use arms; several attempts to rise).

☐ Head down; watches ground while walking.

☐ Cannot walk without assist; grabs at furniture or whatever available.

☐ Short, shuffling gait.

☐ Wheelchair: score according to gait used at transfer.

---

	Normal 0
5. Gait	Weak 10
	Impaired 20

**Mental Status**

**Score 0** if the patient's mental status is normal.

**Score 15** if the patient is considered to overestimate his/her abilities or is forgetful of limitations.

To test mental status: Ask the patient, "Are you able to go to the bathroom alone or do you need assistance?"

- ☐ Normal: patient response is consistent with orders or kardex.
- ☐ Overestimates/forgets limitations: patient response is inconsistent with ambulation order or unrealistic.

#### 6. Mental Status

Normal 0

Overestimates abilities/forgets limitations 15

#### **Calculate Fall Risk Status**

- ☐ Assess each area of risk using the MFS.
- ☐ Tally the patient score and record. (This calculation is done automatically in electronic documentation systems.)
- ☐ Fall risk can range from 0 to 125.

0: No risk for falls

<25: Low risk

25-45: Moderate risk

>45: High risk

---

The total MFS score provides an indication of the likelihood that a patient will fall. However, it does not identify how to protect the patient from falling.

An important goal of the MFS is to identify WHY a patient is at risk for falls. Focusing on the areas of risk identified by the MFS will help to recognize specific interventions to prevent patient falls.

#### **Using the MFS data to plan interventions to prevent patient falls**

Review the areas of risk identified by the MFS for a specific patient.

Select interventions to address **each** area of risk.

Communicate the tailored fall prevention plan to the care team; nurses, nursing assistants, physical therapists, physicians, patients and their family members.

---

Fall prevention starts with the whole care team working from the same plan.

#### **Using the MFS data to plan interventions to prevent patient falls**

---

---

**Area of Risk from MFS**

History of falling

Secondary diagnosis

Ambulatory aid

IV therapy/ heparin (saline) lock

Gait   Mental status

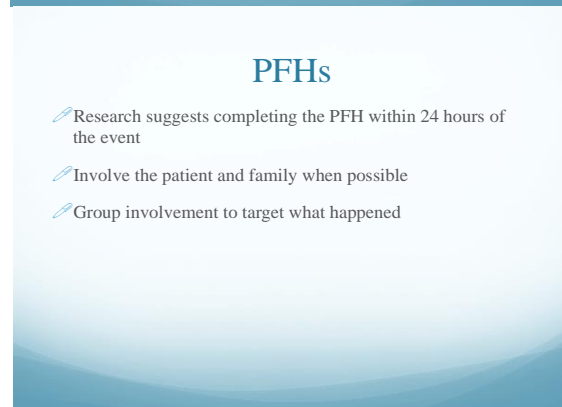
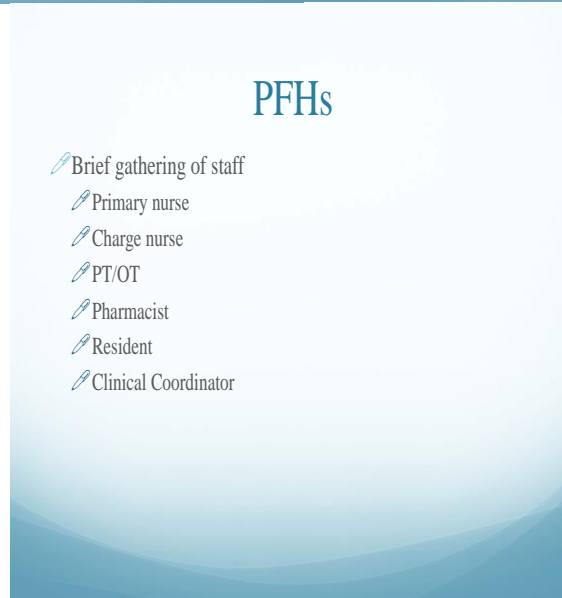
**Interventions**

- Safety precautions
  - Communicate risk status via plan of care, change of shift report and signage.
  - Document circumstances of previous fall.
  - Consider factors which may increase risk for falls: illness/ medication timing and side effects such as dizziness, frequent urination, unsteadiness.
  - Ambulatory aid at bedside if appropriate.
  - Consider PT consult.
  - Implement toileting/rounding schedule.
  - Instruct patient to call for help with toileting.
  - Review side-effects of IV medications.
  - Assist with out of bed.
  - Consider PT consult.
  - Bed alarm/chair alarm
  - Place patient in visible location
  - Encourage family presence
    - Frequent rounding
-



## Appendix F

### PFH Education



## Steps for Conducting PFH

- ✍ Is there an injury that needs immediate/emergent care?
- ✍ Primary nurse announces the huddle and location to other staff members
- ✍ Additional staff and others involved with patient convene in patient's room (no more than 5 individuals)
- ✍ Analyze the fall and the event and factors leading to the fall

## Steps for Conducting PFH

- ✍ Primary nurse summarizes information and needs for additional interventions with other team members
- ✍ Primary nurse completes the PFH sheet and returns it to clinical manager or clinical coordinator
- ✍ Update the patient's plan of care and implement additional interventions
- ✍ Follow additional agency policy for reporting falls

## PFH Expected Outcomes

- ✍ Provides immediate cause of the fall
- ✍ Type of fall is decided
- ✍ Updates/changes patient's plan of care
- ✍ Involves patient in determining cause of fall
- ✍ Repeat falls are prevented

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### Appendix

#### Post Fall Huddle Documentation

A Post Fall Huddle is one suggested best practice for reducing falls. Post fall huddles provide a mechanism to share with staff, to immediately addressing the situation and decreasing the event with the single event, analyzing the patient and family involvement, as well as determining what can be done at the bedside to prevent another fall from occurring.

Directions: To be completed after ALL patient falls as soon as possible after patient care is provided and prior to leaving the unit.

1. How many patient falls previously during this admission?		2. If Yes, what interventions were in place to minimize the risk of a fall?	
<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more		<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more	
3. How preventable was the fall? Circle one.		4. How would the fall have been prevented?	
<input type="checkbox"/> Not preventable <input type="checkbox"/> Probably preventable <input type="checkbox"/> Definitely preventable <input type="checkbox"/> Cannot determine		<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more	
5. Who was involved in the huddle? Circle all that apply.		6. What factors were discussed in the huddle?	
<input type="checkbox"/> Patient <input type="checkbox"/> Family/Caregiver <input type="checkbox"/> Nurse <input type="checkbox"/> Clinical Therapist <input type="checkbox"/> Other		<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more <input type="checkbox"/> Three or more <input type="checkbox"/> Four or more <input type="checkbox"/> Five or more <input type="checkbox"/> Six or more <input type="checkbox"/> Seven or more <input type="checkbox"/> Eight or more <input type="checkbox"/> Nine or more <input type="checkbox"/> Ten or more	
7. Additional comments regarding the huddle:		8. What actions will be taken to prevent another fall from occurring?	
<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more <input type="checkbox"/> Three or more <input type="checkbox"/> Four or more <input type="checkbox"/> Five or more <input type="checkbox"/> Six or more <input type="checkbox"/> Seven or more <input type="checkbox"/> Eight or more <input type="checkbox"/> Nine or more <input type="checkbox"/> Ten or more		<input type="checkbox"/> None <input type="checkbox"/> One <input type="checkbox"/> Two or more <input type="checkbox"/> Three or more <input type="checkbox"/> Four or more <input type="checkbox"/> Five or more <input type="checkbox"/> Six or more <input type="checkbox"/> Seven or more <input type="checkbox"/> Eight or more <input type="checkbox"/> Nine or more <input type="checkbox"/> Ten or more	

Thank you for contributing to patient safety and quality of care.

**Appendix G**

## Post-Fall Huddle Worksheet

Patient Name: \_\_\_\_\_ Date of event: \_\_\_\_\_

1. Has the patient fallen previously during this admission?

- ☐ Yes
- ☐ No

2. If yes, what interventions were in place for fall prevention?

---

---

---

3. How preventable was the fall?

- ☐ Almost certainly could have been prevented
- ☐ Likely could have been prevented
- ☐ Likely could not have been prevented
- ☐ Almost certainly could not have been prevented
- ☐ Unsure

4. How could the fall have been prevented?

---

---

---

5. List all those present in the huddle.

---

---

---

---

6. What was discussed during the huddle? (task errors, judgment errors, need for consults, etc.)

---

---

---

---

---

7. Additional comments discussed during the huddle.

---

---

---

8. What actions will be taken to prevent another fall?

---

---

Signature of Nurse completing form: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix H

### MFS Competency Test

#### Competency

Instruction: Read the case study below. Complete the Morse Fall Scale based on the case study. Identify interventions to prevent falls based on the patient-specific areas of risk. **Return the completed competency to your nurse manager.**

*An 82-year-old man with type 2 diabetes was admitted to the telemetry unit with chest pain and shortness of breath on exertion. On admission, the patient was found to be alert and oriented to place, person and time. He had a heplock in place and he was placed on a cardiac monitor. During the admission interview, the patient reported that he walks with his cane; he was independent with ambulation and transfers. However, the admitting nurse noted that the physician's order was for ambulation with cane and assistance only. After further questioning, the patient reported that he had several falls at home over the past year; most recently last month. As the nurse assisted the patient to the bathroom, she noted that initially he used the bedside table and other furniture as a guide and needed to be reminded to use his cane. Once he was given the cane, the patient walked with short, steady steps to the bathroom.*

Name: \_\_\_\_\_ Unit: \_\_\_\_\_

#### Complete and return to your Nurse Manager.

Use the MFS to determine level of risk for this patient.

Morse Fall Scale		
Item	Select Areas of Risk	Score
1. History of Falling	<input type="checkbox"/> No <input type="checkbox"/> Yes	0 25
2. Secondary Diagnosis	<input type="checkbox"/> No <input type="checkbox"/> Yes	0 15
3. Ambulatory Aid • None/bed rest/nurse assist •	<input type="checkbox"/> None/bed rest/nurse	0

Crutches/cane/walker • furniture	assist	<b>15</b>
	<input type="checkbox"/> Crutches/cane/walker	<b>30</b>
	<input type="checkbox"/> Furniture	
<b>4. IV Therapy/HepLock</b>	<input type="checkbox"/> No	<b>0</b>
	<input type="checkbox"/> Yes	<b>20</b>
<b>5. Gait</b> • Normal/bed rest/wheelchair • Weak • Impaired	<input type="checkbox"/> Normal/bed rest/wheelchair	<b>0</b>
	<input type="checkbox"/> Weak	<b>10</b>
	<input type="checkbox"/> Impaired	<b>20</b>
<b>6. Mental Status</b>	<input type="checkbox"/> Oriented to own ability	<b>0</b>
• Oriented to own ability		
• Overestimates/forgets limitations	<input type="checkbox"/> Overestimates/forgets limitations	<b>15</b>

Total Morse Fall Scale risk score = \_\_\_\_.

Patient is (select 1) ☐ Low

☐ Medium

☐ High Risk for falls.

Based on the areas of risk identified on the MFS, list 3 interventions that would prevent falls for this patient:

- 1.
- 2.
- 3.

**Review the answers to the case study questions below. You may go back to the previous page to review your answers and to make corrections as needed.**

Use the MFS to determine level of risk for this patient. High Risk for falls. MFS Score = 115

- o History of falls: Yes (he fell within the past 3 months)
- o Secondary diagnosis: Yes (type 2 diabetes)
- o Ambulatory aid: Furniture (although the patient has a cane and is supposed to use it, the nurse saw him use furniture as he walked to bathroom)
- o IV/hep lock: Yes (he has a Heplock).
- o Gait: Weak (uses furniture as a guide, short, steady steps)
- o Mental status: Overestimates abilities/ forgets limitations (Although patient is alert and oriented x 3, he \*thinks\* he is independent to the bathroom and he is not.

Based on the areas of risk identified, what interventions should be implemented to prevent falls (list at least 3 interventions)?

**All of the following are appropriate:**

History of falls:

Secondary Diagnosis:

Ambulatory Aid:

IV or Hep Lock Present:

Gait Mental Status:

- Safety precautions
- Communicate risk status via plan of care, change of shift report and signage.
- Document circumstances of previous fall.
- Consider factors which may increase risk for falls: illness/ medication timing and side effects such as dizziness, frequent urination, unsteadiness.
- Request order for PT consult
- Provide Ambulatory aid
- Implement toileting/rounding schedule.

- Instruct patient to call for help with toileting.
- Review side-effects of IV medications.
- Assist with out of bed.
- Consider PT consult.
- Bed alarm/chair alarm
- Place patient in visible location
- Encourage family presence
- Frequent rounding